ΠAMIBIA UΠIVERSITY
OF SCIEΠCE AΠD TECHΠOLOGY

FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE

QUALIFICATION:	BACHELOR OF COMPUTER SCIENCE	
QUALIFICATION CODE: 07BACS, 07BCCS, 07BCCY, 07BCMS		**LEVEL:** 6
COURSE: SYSTEMS ADMINISTRATION		**COURSE CODE:** SAD622S
DATE: NOVEMBER 2022		**SESSION:** 1
DURATION: 2 HOURS		**MARKS:** 50

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
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THIS QUESTION PAPER CONSISTS OF 5 PAGES
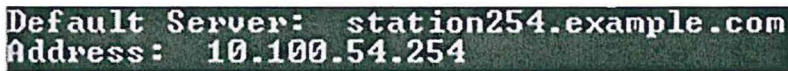(Excluding this front page)

INSTRUCTIONS

1. Answer **all questions**.
2. Write all your answers in the answer booklet provided and number every question.
3. Please, ensure that your writing is **legible, neat** and **presentable.**
4. Marks/scores per question are given in square brackets [ ].
5. Do not use or bring into the examination venue books, programmable calculators, mobile devices and other material that may provide you with unfair advantage. Should you be in possession of one right now, draw the attention of the examination officer or invigilator.
6. All things that should **not** be marked, e.g. any "rough work", have to be crossed out unambiguously.
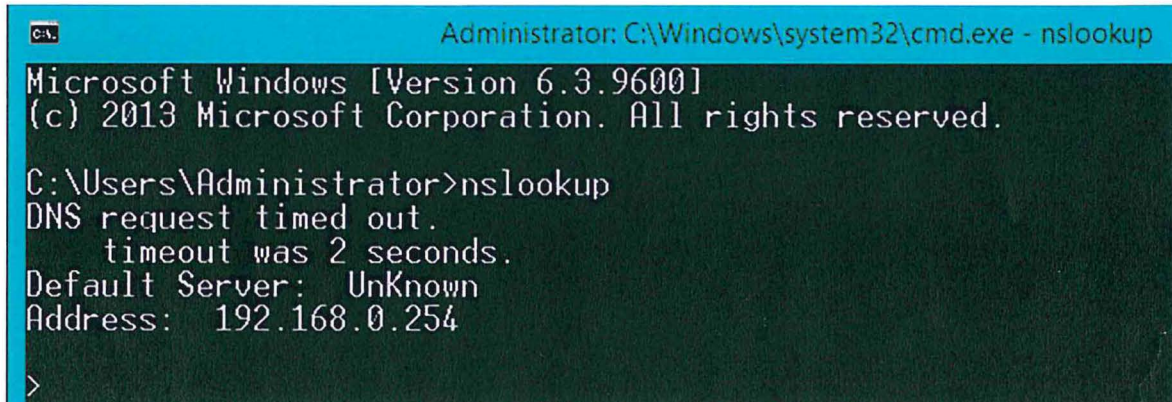
1. **True or False** [10]

   (a) Hyper-V provides services and management tools for creating and running virtual machines and their resources. This can be found **only** in Windows Server 2012.
   (b) When you join Windows 8.1 client computer to a domain, by default the client computer account name will be created in "Computers" container on your domain controller.
   (c) Windows Server 2012 supports IP version 6 while Windows 8.1 does not.
   (d) A forest is a collection of trees.
   (e) You can use **Windows PowerShell** in Windows Server 2012 with full graphical user interface environment.
   (f) A computer gateway is used to access other networks.
   (g) The command **ipconfig** in windows is the same as **ifconfig** in Linux.
   (h) The **AAAA** record in DNS is found in both forward lookup zone and reverse lookup zone.
   (i) Linux was developed in 1990.
   (j) If you are logged in as an ordinary user in Linux, your command line interface will have the "#" symbol.
   (k) The command **"more"** can be used in Linux and Windows.

2. **Multiple Choice**
   i) When configuring Windows Server 2012 as a domain controller and enter `example.com` as the **Root domain name**. Which answer shows that the default NetBIOS name is the same as the server name (hostname).
   a) example0   b) netbios name conflict
   b) c) netbios duplicate   d) server name duplicate

   ii) When promoting your domain controller for the first time and at the stage of creating a **new forest**, if you enter **nust.cs.com** as the **Root domain name**. What will be the default **NetBIOS** name selected by the system?
   a) nust.cs.com   b) .com   c) nust.cs   d) nust

   iii) Which command was used to get the following screenshot?

   ```
   Default Server:  station254.example.com
   Address:  10.100.54.254
   ```

   a) Ipconfig   b) ipconfig /displaydns   c) nslookup   d) ping
   iv) What is the purpose of the following Windows command typed in Windows 10? Select the best answer: **dir > errors.txt**

   a) display the contents of **errors.txt** file   b) overwrite the contents of the file **errors.txt**

   c) captures all errors after the **dir** command   d) to list all files in the current location

2 (v) Your network contains an Active Directory domain named **example.com**. The domain contains a domain controller named DC1 that has the DNS Server server role installed. DC1 hosts a primary zone for **example.com**. The domain contains a member server named Server2 that is configured to use DC1 as its primary DNS server. From Server 2, you run **nslookup.exe** as shown below.
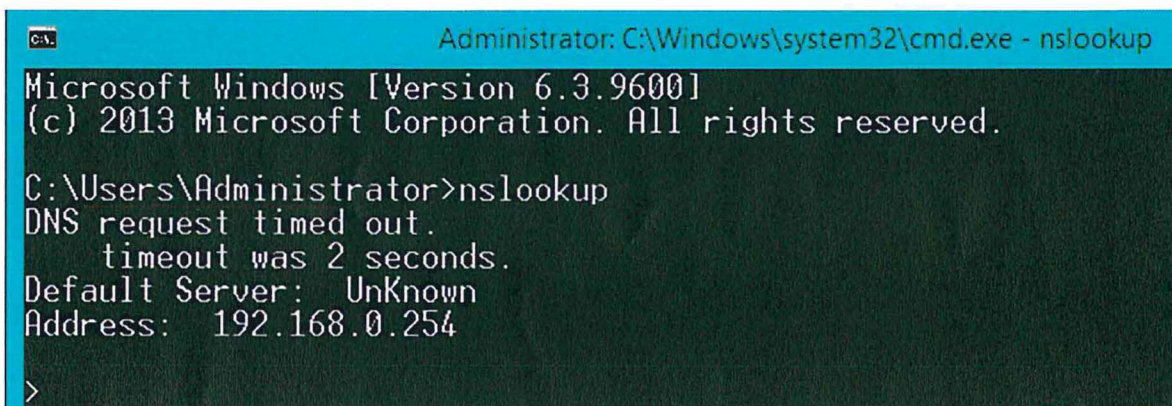
```
Administrator: C:\Windows\system32\cmd.exe - nslookup

Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>nslookup
DNS request timed out.
    timeout was 2 seconds.
Default Server:  UnKnown
Address:  192.168.0.254

>
```

You need to ensure that when you run **nslookup.exe**, the correct name of the default server is displayed. What should you do?

v) Your network contains an Active Directory domain named **example.com**. The domain contains a domain controller named DC1 that has the DNS Server server role installed. DC1 hosts a primary zone for **example.com**. The domain contains a member server named Server2 that is configured to use DC1 as its primary DNS server. From Server 2, you run **nslookup.exe** as shown below.
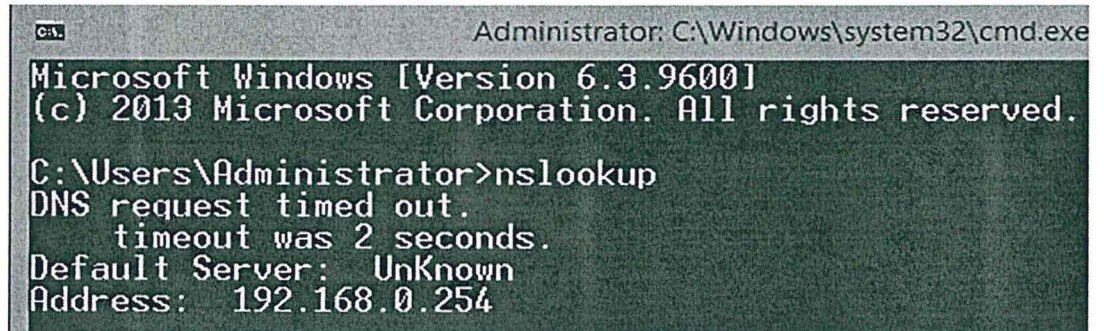
```
CX.                                    Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.3.9600]
(c) 2013 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>nslookup
DNS request timed out.
      timeout was 2 seconds.
Default Server:  UnKnown
Address:  192.168.0.254
```

a) On DC1, create a reverse lookup zone
b) On Server2 add **8.8.8.8** as the primary server
c) On DC1, modify the Security settings of the **example.com** zone
d) From Advanced TCP/IP Settings on DC1, add **example.com** to the DNS suffix list

vi) Your network contains an Active Directory domain named example.com. All user accounts are in an organizational unit (OU) named **Allusers**. You create a Group Policy object (GPO) named GPO1. You link GPO1 to the **Allusers** OU. You need to ensure that GPO1 does not apply to the members of a group named **Supervisors**. What should you configure?

a) The Block Inheritance option for **Allusers**

b) The security settings of GPO1

c) No need to configure anything

d) The security settings of **Allusers**

vii) Select the correct order in which group policies will be processed.

a) site --> domain --> OU --> local computer

b) site --> local computer --> domain --> OU

c) local computer --> site --> domain --> OU

d) domain --> local computer --> site --> OU

viii) Which of the following Linux installation commands used to resolve package dependencies automatically? (Select two).

a) yum   b) rpm   c) install-get   d) apt   e) dpkg

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3. **Short Questions**

   (a) What do you understand by task based delegation? [2]

   (b) How does the DNS recursive lookup process work? [2]

   (c) Give one example of a software which can be used for imaging [1]

   (d) What is a group policy object? [2]

   (e) What are two types of group policy settings and how are they used? [2]

   (f) Give two tasks of a systems administrator [2]

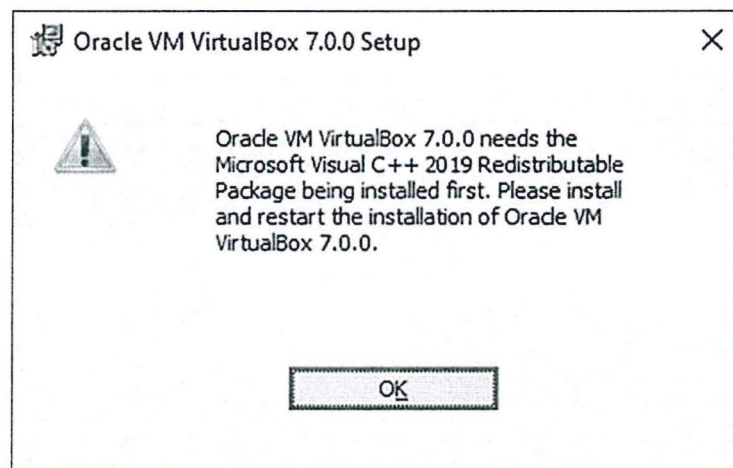   (g) Refer to Diagram A below. You are trying to install Oracle VirtualBox 7.0 on Windows 10 machine.

> 🖳 Oracle VM VirtualBox 7.0.0 Setup ✕
>
> ⚠ Oracle VM VirtualBox 7.0.0 needs the
> Microsoft Visual C++ 2019 Redistributable
> Package being installed first. Please install
> and restart the installation of Oracle VM
> VirtualBox 7.0.0.
>
> OK

Diagram A

   (i) What do you understand by positive and negative dependencies? [2]

   (ii) Based on the error displayed in the diagram is it a positive or negative dependency? Justify your answer. [2]

   (iii) Based on your answer for (ii) state the name of the software which is either positive or negative dependency. [2]

4. **Long Questions**
   (a) Analyse the following **Diagram B** and answer the questions which follows. This diagram is a screen shot from a Windows server 2012 DNS server.

contoso.com Properties

| WINS | Zone Transfers | Security |
| General | Start of Authority (SOA) | Name Servers |

Serial number:
18   Increment

Primary server:
station254.contoso.com.   Browse...

Responsible person:
hostmaster.contoso.com.   Browse...

Refresh interval: 15   minutes

Retry interval: 10   minutes

Expires after: 1   days

Minimum (default) TTL: 1   hours

TTL for this record: 0   :1 :0 :0   (DDDDD:HH.MM.SS)

OK   Cancel   Apply   Help

Diagram B

(i) Using information shown in **Diagram B** above, write down the email address which will be used in case the DNS service experience problems.   [2]

(ii) Which field is used by slave DNS servers to make sure the zone records are consistent with the master DNS server?   [1]

(iii) If a client machine resolves a name through the DNS server with information shown in the **Diagram B** above. That record will be stored in a client's cache. What will be the lifetime for records in the client's cache?   [1]

(iv) If a slave DNS server failed to contact the master DNS server, it will keep on responding to clients requesting for resources under the domain up to a certain maximum period before it stops if it cannot contact the master. What will be the maximum period?

[1]

(b) As an administrator you can administer active directory running a server 2012 core edition using commands. Identify the error in the following command for adding a user to a domain controller active directory and users. [2]

net   user   sad622s   Pa%$w0rd   /add   /contoso.com

5. **Unix Commands**

You are employed by a *Gold Company* as the new Administrator. One day you decide to check the commands which were issued on the server and you find three consecutive commands shown below:

useradd -g users -G special   guest

groupadd   -g 700   b2

date   - - set   "20221225   17:20"

What was the previous Administrator trying to archive with the above commands?

[7]

*** End of question paper ***